

Rhinosinusitis

An anatomical diagram of a human face, overlaid with a semi-transparent orange-tinted image of a person's face. The diagram illustrates the sinuses and nasal cavity. Labels with arrows point to various areas: 'Frontal sinus' points to the forehead area; 'Ethmoid sinus' points to the area between the eyes; 'Maxillary sinus' points to the cheek area; 'Nasal cavity' points to the inside of the nose; 'Areas of facial pain' points to the bridge of the nose and the area around the eyes; and 'Nasal discharge from both nostrils that may be worse on one side' points to the nostrils.

IDSA Guidelines for Management of
Acute Bacterial Rhinosinusitis

- **31 million people in the U.S. are diagnosed with sinusitis per year. (1)**
- **Sinusitis is the fifth most common condition for which antibiotics are prescribed. (1)**
- **\$3 billion total direct healthcare cost per year**
- *“A recent national survey...showed that antibiotics were prescribed for 81% of adults with acute rhinosinusitis, despite the fact that approximately 70% of patients improve spontaneously in placebo-controlled randomized clinical trials. Thus, overprescription of antibiotics is a major concern in the management of acute rhinosinusitis, largely due to the difficulty in differentiating ABRS from a viral URI.” (3)*

Defining Sinusitis

- **Sinusitis is classified as acute, chronic, or recurrent acute.**
- **It is also classified as bacterial or viral**

- It can be caused by allergens, environmental irritants, and infection by viruses, bacteria, or fungi.
- Most common cause: viral etiology associated URI (90-98%) (3)

Acute Rhinosinusitis (bacterial or viral)

- “Up to 4 weeks of PURULENT NASAL DRAINAGE (anterior or posterior) AND nasal obstruction and/or facial pain, pressure” (1)
 - Purulent nasal discharge = cloudy or colored
 - Nasal obstruction = “congestion,” “stuffy,” “blockage,” or seen on physical exam
 - Facial pain/pressure/fullness = anterior face, periorbital region, local or diffuse headache
- “Acute rhinosinusitis is defined as an inflammation of the mucosal lining of the nasal passage and paranasal sinuses lasting up to 4 weeks.” (3)

CHRONIC rhinosinusitis

- 2+ of the following symptoms for 12+ weeks
 - Mucopurulent drainage
 - Nasal obstruction
 - Pain
 - Decreased sense of smell
- AND inflammation by at least one of the following findings:
 - Purulent mucus or edema in middle meatus or ethmoid region
 - Polyps in nasal cavity or middle meatus
 - Radiographic imaging confirming inflammation

Recurrent Acute Rhinosinusitis

- 4 + episodes of bacterial rhinosinusitis without signs or symptoms in between episodes.

ACUTE BATERIAL RHINOSINUSITIS



Bacterial if...

- Signs and symptoms of acute rhinosinusitis persist 10 or more days with out any clinical improvement
- Symptoms are severe:
 - purulent nasal discharge and facial pain for 3+ days at the beginning)
 - OR high fever (102 F or higher)
- Signs and symptoms WORSEN after initial improvement (“double sickening”)

Common pathogens of Bacterial Rhinosinusitis (3)

Table 6. Prevalence (Mean Percentage of Positive Specimens) of Various Respiratory Pathogens From Sinus Aspirates in Patients With Acute Bacterial Rhinosinusitis

| Microbial Agent | Publications Before 2000 | | Publications in 2010 | |
|--|-----------------------------|------------------------------|----------------------------|------------------------------|
| | Adults ^a (%) | Children ^b (%) | Adults ^c (%) | Children ^d (%) |
| <i>Streptococcus pneumoniae</i> | 30–43 | 44 | 38 | 21–33 |
| <i>Haemophilus influenzae</i> | 31–35 | 30 | 36 | 31–32 |
| <i>Moraxella catarrhalis</i> | 2–10 | 30 | 16 | 8–11 |
| <i>Streptococcus pyogenes</i> | 2–7 | 2 | 4 | ... |
| <i>Staphylococcus aureus</i> | 2–3 | ... | 13 | 1 |
| Gram-negative bacilli (includes <i>Enterobacteriaceae</i> spp) | 0–24 | 2 | ... | ... |
| Anaerobes (<i>Bacteroides</i> , <i>Fusobacterium</i> , <i>Peptostreptococcus</i>) ^e | 0–12 | 2 | ... | ... |
| Respiratory viruses | 3–15 | ... | ... | ... |
| No growth | 40–50 | 30 / 41 | 36 | 29 |

Initial Treatment

- Start with empiric treatment at the time of diagnosis.*
- Amoxicillin/clavulanate (Augmentin)
- High dose Augmentin if
 - Live in region with endemic rate of 10%+ of penicillin nonsusceptible strep pneumo
 - Severe infection
 - Child in daycare
 - Age younger than 2 or greater than 65
 - Recent hospitalization
 - Recent use of abx within 1 mo
 - Immunocompromised

* previously, placebo show comparable improvement to abx in some randomized trials (2007) so an observation period was observed. (1) But, based on new IDSA recommendations , empiric tx should start right at diagnosis. (2)

Empiric Tx if PCN allergy

- ADULTS: doxycyclin or respiratory fluoroquinolone (levofloxacin or moxifloxacin)
- Children: (type 1 hypersensitivity) levofloxacin, (non type 1) clindamycin + 3rd gen cephalosporin.

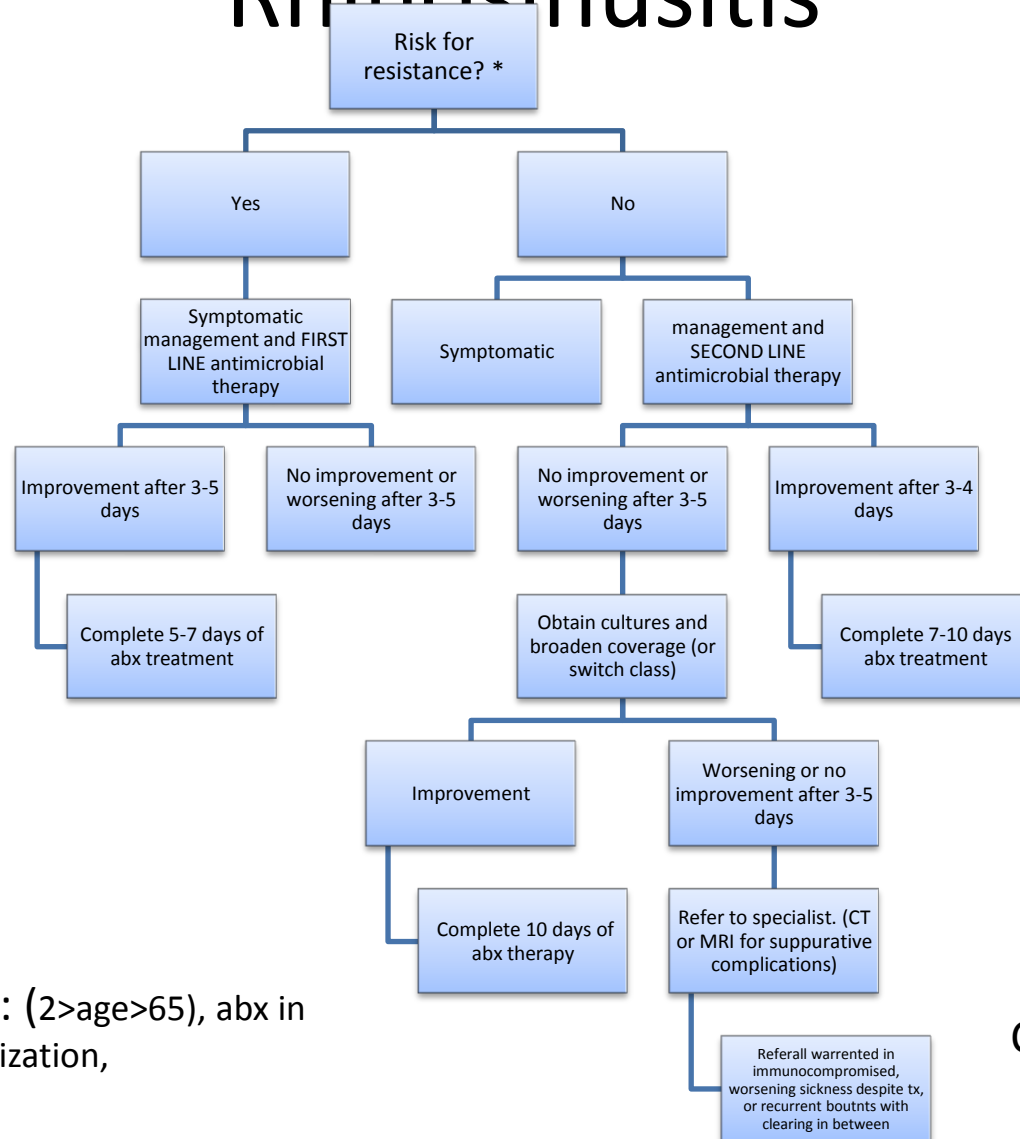
Routine empiric coverage for MRSA is not recommended

Treatment duration

- ADULTS: 5-7 days
- CHILDREN: 10-14 days

(weak, low-moderate)

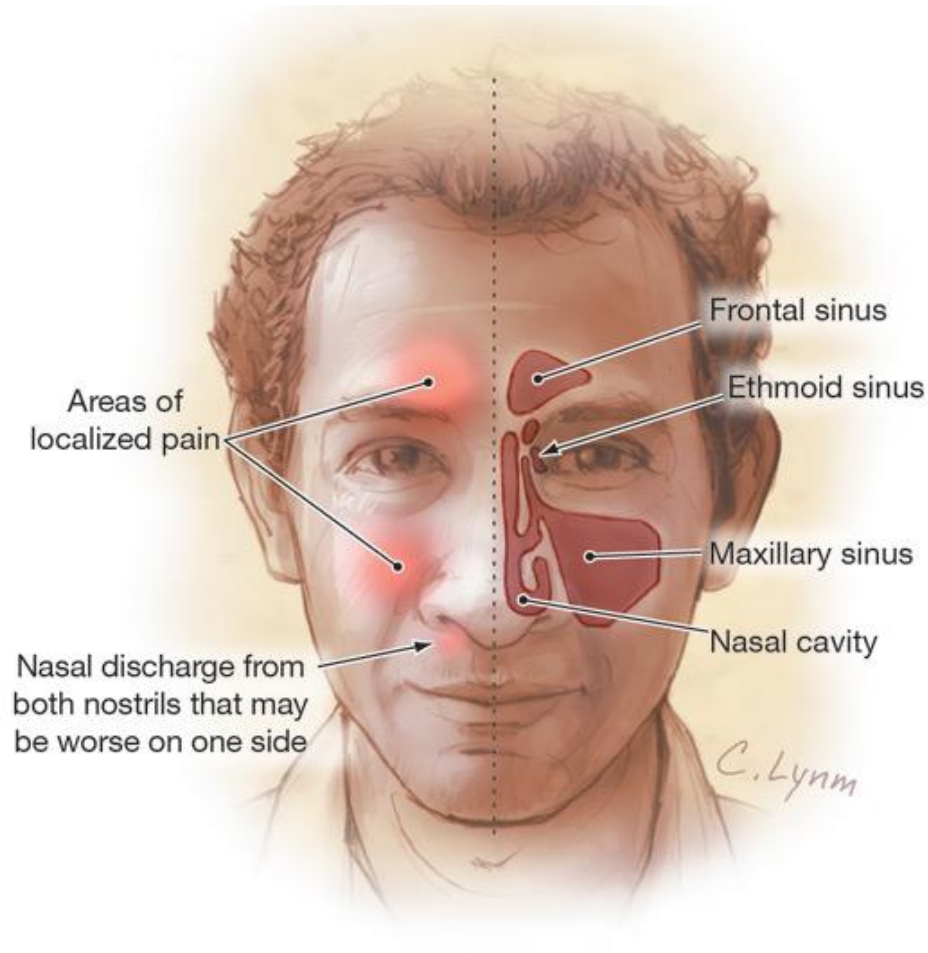
Management of Acute Bacterial Rhinosinusitis



* Risk for resistance: (2>age>65), abx in past 1 mo, recent hospitalization, immunocompromised

Chart adapted from (3)

Treating Symptoms



Treating Symptoms (Viral and Bacterial Sinusitis)

- Congestion
 - Topical or systemic decongestants (alpha-adrenergic) may provide relief. Topical decongestants are more effective than oral decongestants, but limit use to 3 days 2/2 risk of rebound nasal congestion after discontinuation of therapy.
 - Systemic steroids have not been shown to be effective and weak evidence supports nasal steroids.
 - Saline irrigation may also help.
 - Non of these, USFDA approved

...Treating Symptoms (Viral and Bacterial Sinusitis)

- *PAIN*
 - Important to treat
 - Important to follow up (ongoing assessment) using any pain scale.
 - Acetaminophen or nonsteroidal anti-inflammatory drugs, with or without opioids

References

1. Huntzinger, A., Guidelines for the Diagnosis and Management of Rhinosinusitis in Adults *Am Fam Physician*. 2007 Dec 1;76(11):1718-1724.
2. Lambert, M., IDSA Released Guidelines for Management of Acute Bacterial Rhinosinusitis. *Am Fam Physician*. 2013 March 15; 87 (6): 445-449
3. Chow, A.W., Benninger, M.S., Brook, I. (et al). IDSA Clinical Practice Guideline for Acute Bacterial Rhinosinusitis in Children and Adults.
http://www.idsociety.org/uploadedFiles/IDSA/Guidelines-Patient_Care/PDF_Library. March 20, 2012.
Accessed March 29, 2013.

